Media Watch on Climate Change

Geospatial Web Technology for Accessing Environmental Online Resources

http://www.ecoresearch.net/climate

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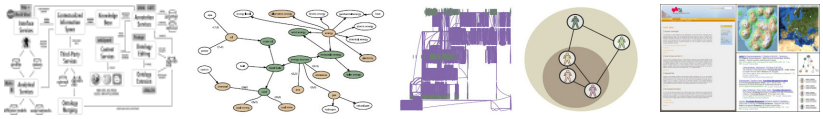


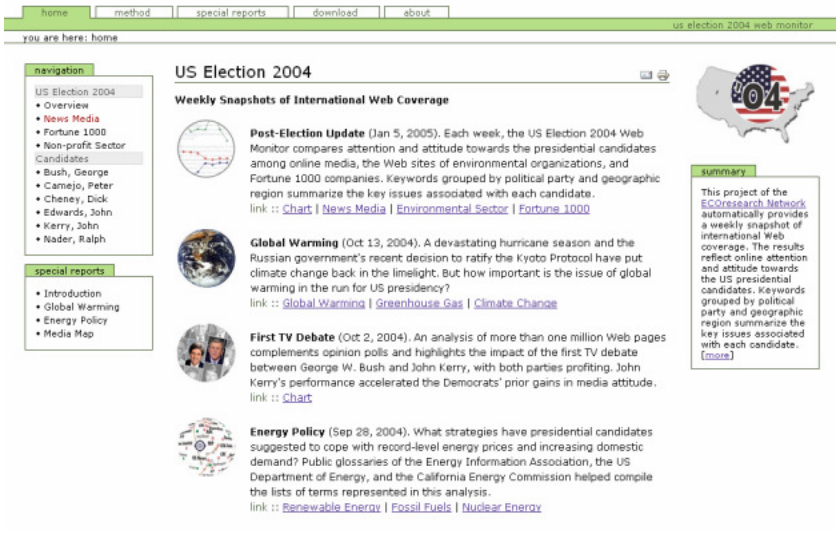
Overview

- **US Election 2004 Web Monitor**
  http://www.ecoresearch.net/election2004/
- **IDIOM**
  Information Diffusion across Interactive Online Media
  http://www.idiom.at/
  - Service-Oriented Architecture
    - Content and Annotation Services
    - Interface Services (Semantic, Geographic)
    - Analytical Services (Visual, Statistical)
  - Use Cases
    - CCC: Climate Change Collaboratory
    - CATER: Contextualized Access of Tourism-Related Electronic Resources

Research Questions

- How widespread is content redundancy, and what influences content replication within and across social networks?
- Does media interactivity influence information diffusion? Can existing models such as hub-and-spoke, syndication and peer-to-peer explain this influence?
- Which content placement strategies increase the impact on the target audience and support self-reinforcing content propagation in virtual communities (viral marketing)?
- Impact of macroscopic information flows on environmental awareness and public opinion? What are appropriate methods to measure and model the extent, dynamics and latency of this process?

US Election 2004 Web Monitor



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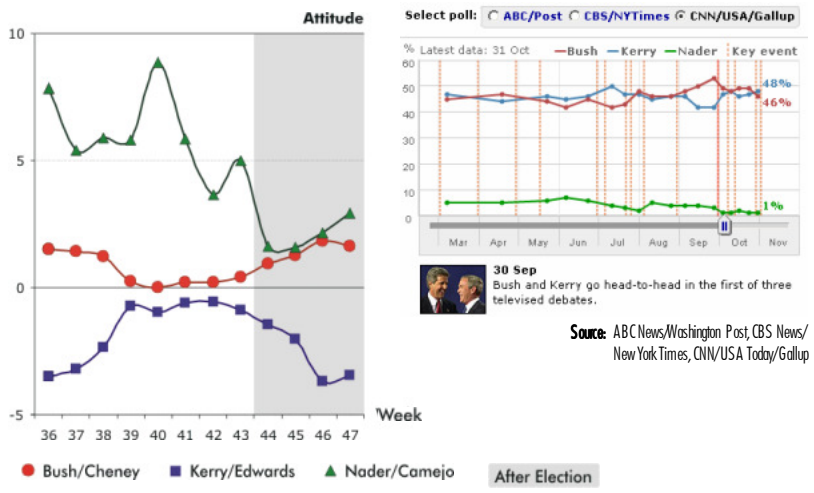

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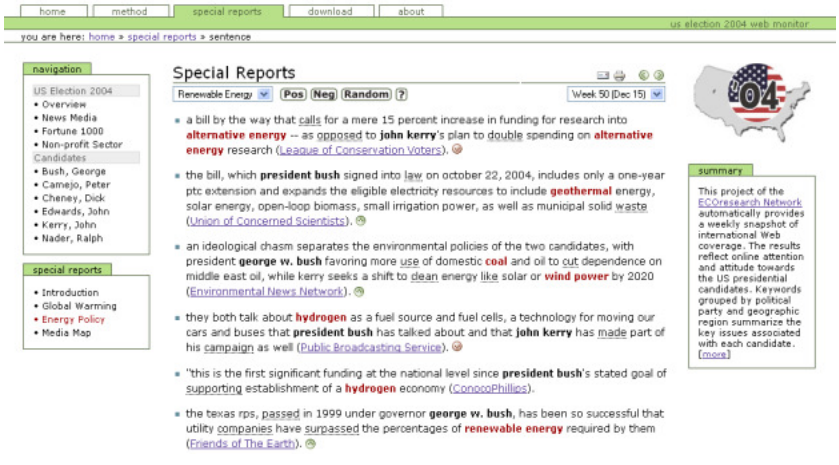

www.idiom.at • www.modul.ac.at/nmt
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Media Watch on Climate Change

Contextualized Information Space

Collaboration platform and knowledge repository annotated along multiple dimensions

- Urgency and scope of environmental problems call for both immediate action and sustainable long-term strategies (Time)
- ICT transform the way we handle the explosive growth and reduced lifespan of environmental knowledge (Semantics)
- Interdependency of micro- and macro-level indicators and strategies > e.g. “Think globally, act locally!” (Location)

Media Watch on Climate Change

- Public Web Portal
  http://www.ecoresearch.net/climate/
- Extraction of Environmental Knowledge

150	Anglo-American News Media Sites
200,000	Documents (Mirrored in Weekly Intervals)
10,000	Environmental Articles

- Contextualized Information Space

Spatial	Annotate Source and Target Geography BBC: „Vienna Marking Mozart Milestone“ Source: Europe | United Kingdom | London Target: Europe | Austria | Vienna
Semantic	Classify Documents, Assign Ontology Concepts
Temporal	Add Timestamps to Publications, Events, etc.

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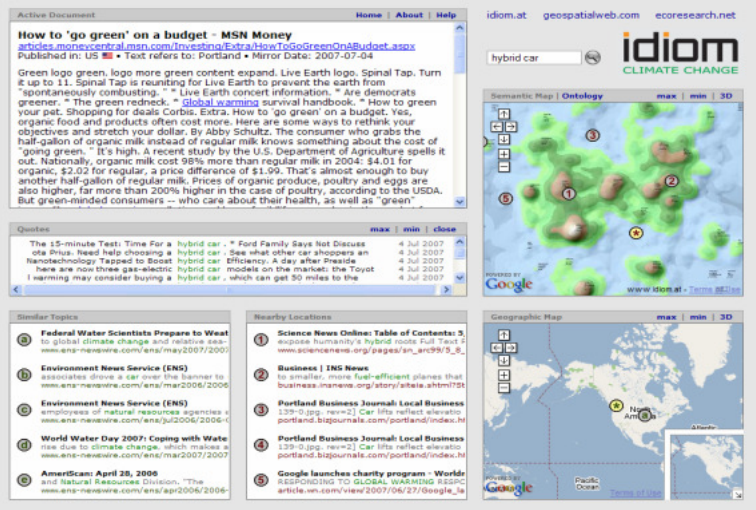
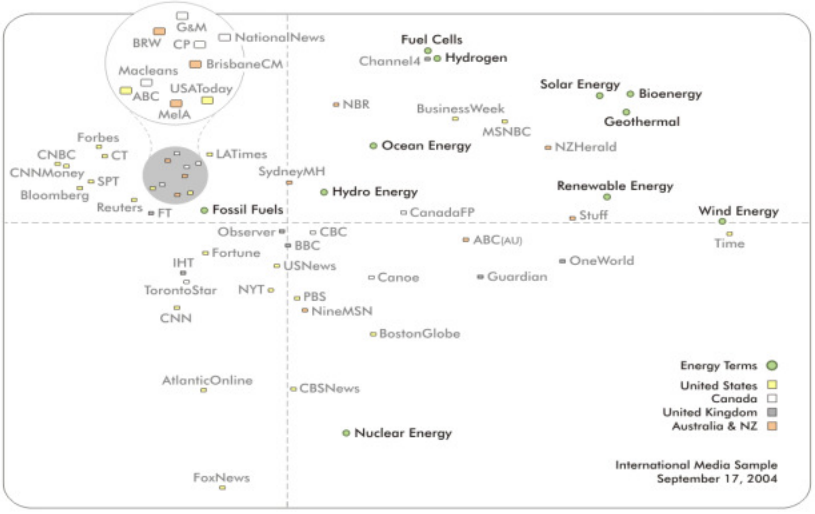
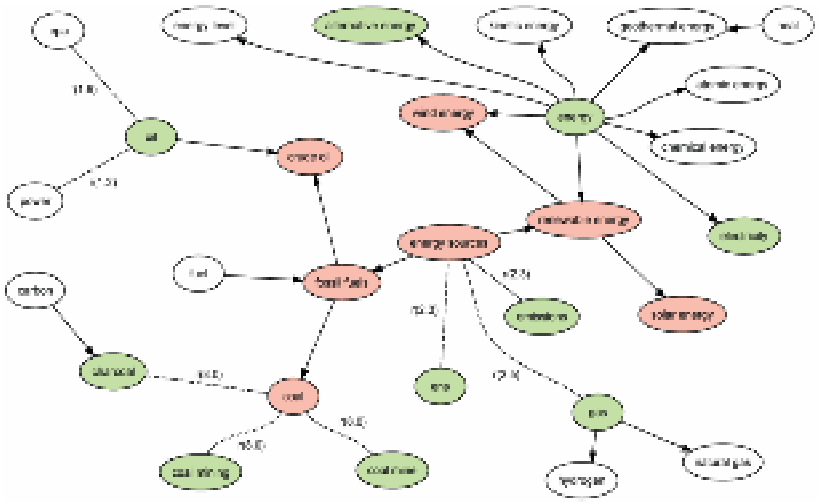


Perceptual Map

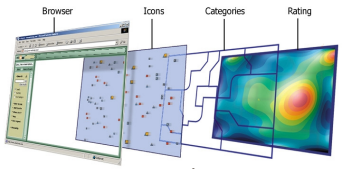


Ontology Services

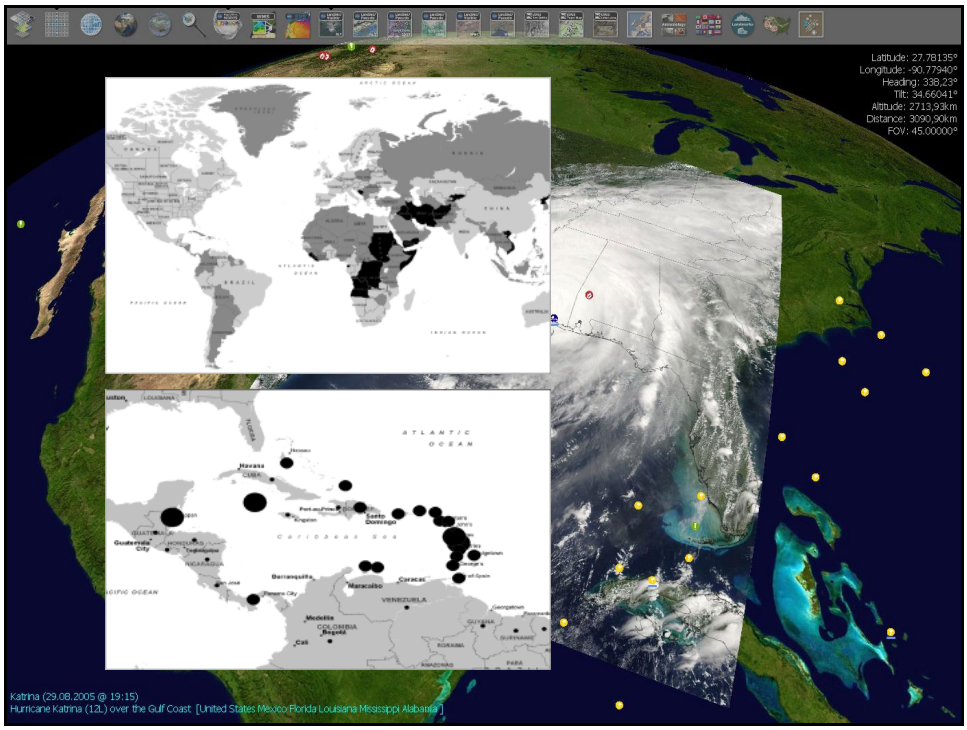


Interface Services

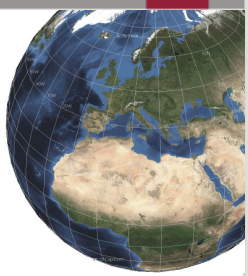
- Semantic Interfaces
  - Perceptual Maps (US Election Monitor 2004)
  - Information Landscapes (Aureka, VisIslands)
  - Ontology-based Visualizations
- **Geospatial Interfaces**
  The Geospatial Web "may ultimately be the big disruptive innovation of the coming decade" (Erle et al. 2005, xxv).
  - 2D Platforms
    - MapQuest
    - Google Maps
    - Yahoo! Maps
  - 3D Platforms
    - NASA WorldWind
    - Google Earth
    - MS Virtual Earth



WebMap Technologies



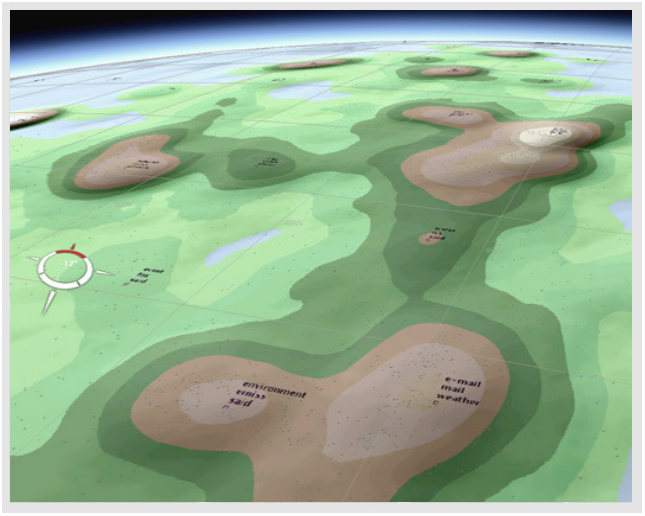
The Geospatial Web

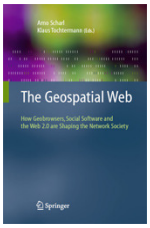


- Integrates
  - Cartographic Data
  - Environmental Indicators
  - Geotagged Hypermedia
- Knowledge Planets
  - Topology of Information Landscape
    - Peak = Cluster of Documents on a Specific Topic
    - Valley = Sparsely Populated Part of the Information Space
  - Projecting Information Landscapes onto Virtual Globes
    - Initial Arrangement and Stability of Topics
    - Navigation Across Layers and the 0° Meridian Line
  - Download | www.geospatialweb.com/chapter-1

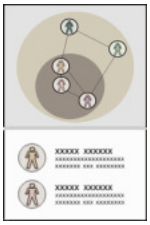
Scharl, A. (2007). "Media Platforms for Managing Geotagged Knowledge Repositories", The Geospatial Web – How Geobrowsers, Social Software and the Web 2.0 are Shaping the Network Society. Eds. A. Scharl and K. Tochtermann. London: Springer. 3-14.

Climate Change Media Watch

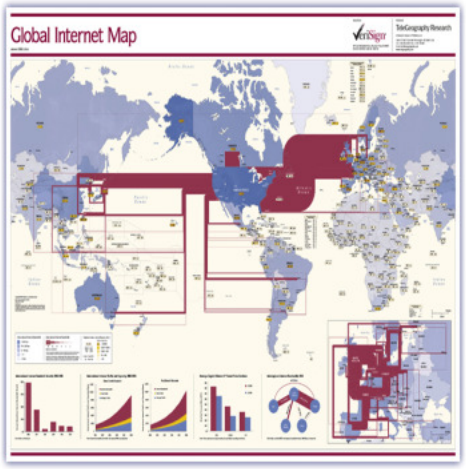


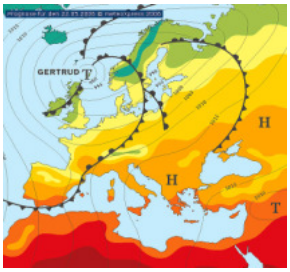


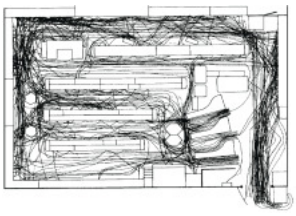
www.geospatialweb.com



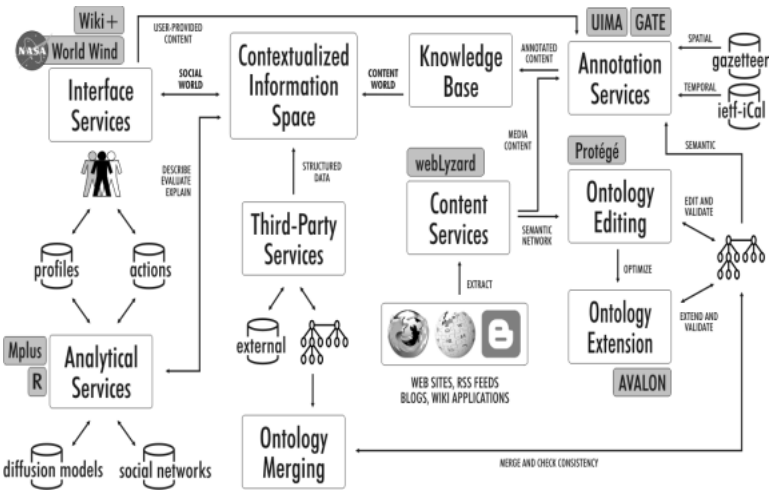
Analytical Services







IDIOM System Architecture



New Media Trends

- **Social Computing and the Web 2.0**
  - Governed by strong **network effects** and harnessing **collective intelligence** through customer-self service and algorithmic data management (O'Reilly 2005)
  - Blur the distinction between content production and content consumption
- **Hybrid Models of Content Production**
  - Individual (Monographs, Blogs)
  - Cooperative
    - Hierarchical (Newspaper Articles, Edited Books, Traditional Encyclopedias)
    - Evolutionary (Groupware, CMS, Wiki)
  - Automated (News Aggregators)